A New Species of *Heterospathe* with Undivided Leaves from the Philippines

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This new species of *Heterospathe* is most remarkable for its beautiful, erect, and consistently entire or undivided, bifid leaves. It has great horticultural potential.

The central and eastern parts of Mindanao Island, among other areas in the Philippines, remain undercollected for palms (Fernando 1990a). One elegant new species in the genus *Heterospathe* Scheff. (see Front Cover) has very recently been discovered in forests on ultramafic rocks on the northeastern part of the island and is described below. This adds to the 11 species previously recorded for the genus in the Philippines (Fernando 1990a, 1990b).

Heterospathe califrons *Fernando,* **sp. nov.,** Fig. 1

Habitu solitario vaginis foliorum et petiolis persistentibus *Heterospathe brevicauli* Fernando affinis sed foliis indiviso-bifidis distinctissima. Typus: Philippines, Mindanao Island, Surigao del Sur Prov., Carmen, *Fernando 1567 & Sotalbo* (Holotypus LBC; isotypi BH, K, PNH, PUH).

Solitary, moderate, unarmed, pleonanthic, monoecious, undergrowth palm to 2.7 m tall. *Stem* erect, rough-ringed, to ca. 1.5 m tall, ca. 6 cm diam.; internodes to 1 cm long. *Leaves* undivided, bifid (Fig. 2), to 13 in crown, erect, arching at maturity; emerging leaves green; leaf including petiole and sheath to 2 m long; sheaths not forming a well-defined crownshaft, each to 24 cm long, the edges fibrous and marcescent; petiole green, only occasionally light purple, ca. 85 cm long, deeply channelled adaxially, the edges sharply angled, convex abaxially and sparsely puncticulate; sheath and petiole persistent on the stem; mid-rachis triangular, channelled adaxially, convex abaxially, sparsely puncticulate; lamina undivided, inversely sagittate, bifid, to 115 cm long, 35 cm wide, lobe to 35 cm long, pinnately ribbed and distinctly plicate, up to 25 major costae

facing page
1. *Heterospathe califrons* Fernando. **A** habit × 1/15; **B** leaf sheath and basal portion of petiole × 1; **C** distal portion of petiole and basal lamina × 1; **D** apical portion of lamina × 7/8; **E** young inflorescence and prophyll ×1; **F** portion of rachilla × 2.5; G staminate flower × 12; **H** staminate flower showing stamens and pistillode × 12; **I** pistillate flower ×11; **J** sepal of pistillate flower × 10; **K** petal of pistillate flower × 11; **L** pistil × 11; **M** infructescence × 1; **N** fruit × 3.5; **O** seed × 3; **P** vertical section of seed × 3. **A–L** from *Fernando 1567 & Sotalbo,* **M–P** from *Fernando 1575.* Drawn by F.B. Samiano.


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2 (top left). *Heterospathe califrons* in rather open forest. 3 (top right). *H. califrons*: inflorescence in bud. 4 (bottom left). *H. califrons*: inflorescence at staminate anthesis. 5 (bottom right). *H. califrons*: infructescence with ripening and ripe fruit. All photos: E.S. Fernando.

6. *Heterospathe califrons* growing with *Areca costulata* in forest on ultramafic rocks, Diwata Mountains, Mindanao. Photo: E.S. Fernando.

(ribs) on each side of the rachis, the abaxial surface drying glaucescent; indumentum on midrib red-brown scurfy. *Inflorescence* interfoliar (Figs. 3, 4), erect, becoming only slightly curved in fruit, to 85 cm long, branching to 2 orders; peduncle ca. 57 cm, covered with brown scales; prophyll lanceolate, ca. 20–35 × 2.0–2.5 cm, persistent, attached near the base and completely encircling the peduncle, tubular, 2-keeled laterally, and splitting abaxially and apically; peduncular bract attached below middle of peduncle, to ca. 37 × 2.4 cm, splitting abaxially, marcescent as the inflorescence matures; 1 or 2 basal first-order branches of rachis further branching with 2 rachillae, distal branches as rachillae, ca. 10–12, arranged spirally along axis, each ca. 0.2 × 5–13 cm, more or less terete or slightly angular, tapering distally, covered with brown scales as peduncle; triads or very rarely paired flowers borne spirally along the rachilla and subtended by low, lip-like bracts. *Staminate* flower oblong, light yellowish, ca. 2 × 4 mm; sepals 3, petals 3, longer than the sepals; stamens 6, filaments white; pistillode prominent, conical. *Pistillate* flower rounded in bud, greenish-yellow, shorter than the staminate flower, ca. 1.5 × 2 mm; sepals 3, imbricate, ciliolate along the margins, ca. 1.2 × 1.5 mm; petals 3, imbricate at base, broadly acute at tips, ca. 1 × 1.5 mm; pistil ovoid-conical, ca. 0.8 × 1.2 mm, staminodes minute. *Infructescence* (Fig. 5) with erect to slightly arching rachillae. *Fruits* spirally arranged along the rachilla, glossy green, ripening yellow then red, oblong-ovoid, 16 × 7 mm, stigmatic residue obliquely apical, pericarp thin, fibrous, epicarp peeling off readily and drying granulose with sclerosomes. Seed ovoid, ca. 15 × 8 mm, with prominent hilum, endosperm ruminate; embryo basal. Germination adjacent-ligular; eophyll bifid.

DISTRIBUTION AND HABITAT: PHILIPPINES. N.E. Mindanao: eastern slopes of the Diwata Mountains, in forest on ultramafic rocks, with canopy to 20 m, often along small creeks and partially water-logged areas; ca. 580 m alt. Endemic.

SPECIMENS EXAMINED: PHILIPPINES. Mindanao Island, Surigao del Sur Prov., Carmen, *Fernando 1565* (LBC); *Fernando 1567 & Sotalbo* (holotype

LBC; isotypes BH, K, PUH); *Fernando 1568 & Co* (LBC), *Fernando 1570* (LBC), *Fernando 1575* (K, LBC); *Co 4932* (PUH), *Sotalbo 1123* (PUH).

VERNACULAR NAME: *Yanisi* (Manobo).

The entire or undivided, bifid leaf is rarely known in the genus (Uhl & Dransfield 1987), except very rarely, in *Heterospathe scitula* Fernando from Luzon Island (Fernando 1990b). In its undergrowth habit and erect, undivided, and bifid leaves, it looks very similar to *Asterogyne martiana* (H. Wendl.) H. Wendl. ex Hemsley from Costa Rica. The solitary, short-stemmed habit, and persistent leaf sheaths and petioles are also reminiscent of *Heterospathe brevicaulis* Fernando from Luzon Island (Fernando 1990b) growing on similar habitats.

Heterospathe califrons was found growing with another arecoid palm, the stilt-rooted *Areca costulata* Becc. (hitherto unrecorded for Mindanao Island) (Fig. 6), and other plants such as large clumps of the sedge *Mapania palustris* (Hassk. ex Steud.) F.-Vill. [Cyperaceae], the rattan *Calamus aidae* Fernando, *Pandanus copelandii* Merr., *Sararanga philippinensis* Merr. [Pandanaceae], *Tristaniopsis micrantha* (Merr.) P.G. Wilson & J. T. Waterhouse [Myrtaceae] and the pitcher plants *Nepenthes merrilliana* Macfarl. and *Nepenthes truncata* Macfarl. [Nepenthaceae]. *Heterospathe califrons* appears to be restricted to ultramafic habitats and has not been observed elsewhere in adjacent forests of other types. It prefers areas that are partially water-logged or near small creeks. Only a small population exists in the type locality, and the area urgently needs to be adequately protected. Although four other species of *Heterospathe* [viz. *H. elata* Scheff., *H. elmeri* Becc., *H. intermedia* (Becc.) Fernando and *H. philippinensis* (Becc.) Becc.] are known from Mindanao or nearby smaller islands, these are not known to occur in ultramafic habitats and have not been observed in association with *H. califrons*.

Heterospathe califrons has great potential as an ornamental plant and, undoubtedly, is one of the most beautiful endemic palms of the Philippine Islands.

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